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THE IMS, METADATA, AND WEB-BASED LEARNING RESOURCES

Since the emergence of XML the number of metadata specifications being developed for vertical and horizontal applications has soared. Soon we will have many more than we need and competition will prune the number of offerings. Metadata specifications that are designed with application and information integration in mind are much stronger candidates for utility and success.

IT strategists are increasingly aware of this integration requirement, yet one area that still seems to escape attention is corporate training. The overlap in IT requirements for corporate training applications and other areas involving information management and delivery, such as technical documentation, is significant, and the lack of attention surprising.

In this issue, Dick Vacca reports on an effort to develop a metadata specification for educational and training applications. While still a work in progress, this activity looks like it could be important and should be tracked by anyone responsible for implementing corporate training technology. In fact, because this project is paying careful attention to the need to integrate with other corporate systems, including e-commerce systems, anyone involved in corporate IT strategy should be aware of it.

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THE IMS, METADATA, AND WEB-BASED LEARNING RESOURCES

Gilbane Report readers are familiar with the issues surrounding metadata and its uses on the web (see *Vol 5 No 5* and *Vol 7 No 2*). In this article, we focus on metadata efforts moving forward in education, in particular in the corporate training environment.

"Education and training" as a topic hasn't received much attention in the current discussions involving web-based content management and ecommerce. But that may be about to change because of the efforts of IMS, a two-year-old non-profit partnership of academic, corporate, and public institutions.

IMS has an ambitious goal: to enable an open architecture for online learning, and to develop specifications for the commercial systems that make it possible. IMS¹ is not in the software or content business; rather, it is defining technical specifications for products to follow to enable application and content interoperability. This covers not only educational content and web delivery, but also the financial and administrative systems behind instruction. IMS touches all the right bases: systems interoperability and convergence, content management, XML, e-commerce, and rights management. And it all starts with the metadata specification for webbased learning resources.

IMS—WHAT'S BEHIND IT?

The chronic problem with learning systems is that they stand alone in enterprise computing, with separate applications and data stores for registrations, student financials, and academic records. Course content management, even at the department level, is weak at best — the standalone silo is the norm.

Web-based resources have a limited impact on the build-or-buy decisions made in course development. There are no standards or structures in place to describe content, nor are there standards for compensating content producers for their material. Should content be identified, it must be downloaded, paid for, and integrated into the existing learning environment. Finally, the throughput of all courses at all levels is students, and that entails a complex administrative support system for registration,

¹ "IMS" does not actually stand for anything. It **used** to stand for "Instructional Management Systems project", but it was felt that this name did not accurately reflect project activities.

student records, and tracking academic progress. Thus IMS is addressing two issues: finding things and managing things.

IMS embraces everyone, from K-12 to higher education to corporate and military training. That's a lot of courses to build, students to monitor, and costs to track. Just how big is this? If we narrow our focus to corporate training, the size-of-market numbers are impressive. The Gartner Group estimates that companies in the United States spent \$58 billion on training in 1998, and of that, \$9.4 billion went to IT-related training. They expect this figure to grow to \$10.5 billion this year. With the development of the worldwide network infrastructure, the growth in distance learning, and the healthy economy, the training market is big and getting bigger.

The time is right for a major initiative like IMS. The market is big enough to merit serious attention from content providers and software developers. The technology to enable it is available: the web is a proven vehicle for delivery and transactions, there are web-based course environments that integrate both learning and administrative requirements, and XML provides the exchange standard needed for systems interoperability. IMS is in the right place to drive the convergence of instruction, content, and management technologies.

WHO IS IMS?

IMS is a global coalition of academic, corporate, and public institutions working to define the Internet architecture for learning, and the roster of IMS members shows broad support from all sectors of the education economy. Member organizations participate at either the developer or investor level. There are over 200 developer organizations participating in specifications development. An investor organization (currently there are about 35) participates in development, but also has a role in setting direction. As the name implies, these organizations also make a financial and human resources commitment to supporting IMS and its activities.

IMS brings together educators, software developers, and content developers. Among its investor organizations are tools developers (Blackboard, Aysmetrix), content providers (Pearson Education, International Thomson Publishing), back-office developers (PeopleSoft, Oracle), higher education (as diverse as the University of California and Miami-Dade Community College), and consumers of training (U.S. Department of Defense).

THE IMS DEVELOPMENT PLAN

IMS currently has four working groups developing sets of specifications. The metadata group released version 1.0 of its specification in August. The questions/test group will release its first version before the end of 1999, with the content and enterprise groups releasing their specifications sometime in 2000.

"... companies in the United States spent \$58 billion on training in 1998, and of that, \$9.4 billion went to ITrelated training." "Learning systems interoperability is not a problem that developed overnight, and various other organizations are active in overcoming it."

- ▲ *Metadata*: Specify a metadata system for finding, retrieving, and operating web-based learning resources.
- ▲ *Question and test interoperability*: provide specifications for question banks that can be used in any learning environment, and for reporting test results in a consistent manner. The group will also describe the API for scoring and assessment engines.
- ▲ *Content and management systems interoperability*: provide a standard model for describing the structure of content, and provide a specification for content packaging and interchange, loading, and tracking.
- ▲ **Enterprise systems interoperability**: define the specifications for enabling a learning system to interoperate with administrative systems such as registration, enrollment, human resources, and financial management. This includes defining messages, transactions, and the interface protocol for data exchange.

A COLLABORATIVE APPROACH

Learning systems interoperability is not a problem that developed overnight, and various other organizations are active in overcoming it. IMS has cooperative agreements with these organizations, building on their progress rather than competing with it. Among the notable alliances are those with ADL and ARIADNE.

- ▲ The Advanced Distributed Learning Initiative (ADL) is a program of the U.S. Department of Defense and the White House Office of Science and Technology. It is developing guidelines for largescale distributed learning systems, and is a key part of DoD's effort to establish a consistent environment across the military services and all other DoD components.
- ▲ ARIADNE is a research and technology development project sponsored by the European Union, developing resources for producing, managing, and reusing computer-based, networkenabled training. ARIADNE is working with both the IEEE Learning Technology Standards Committee (LTSC) and IMS to produce a widely acceptable set of educational metadata. IMS will also submit its metadata specification to IEEE as the first step in establishing a certified international standard.

These alliances are significant—ADL because it is backed by one of the world's largest training organizations, and ARIADNE because it underscores the recognition that international action is needed to develop a metadata standard for learning materials.

A LOOK AT THE IMS METADATA SPECIFICATION

The IMS metadata specification owes some of its inspiration to the Dublin Core, a general metadata standard for electronic resources finalized in 1996 and heavily used in the library community. IMS follows the spirit of Dublin Core in its desire to create a specification that can be used across cultures and disciplines.

IMS developers have defined a dictionary of about 100 metadata elements, as well as the rules that dictate how these elements and their values can be used to create hierarchical structures—*schemas*. IMS created several schemas: a master schema containing all elements, a base schema containing all core elements (including most of the Dublin Core's element set), and other schemas for defining individual items, modules (collections of items, as for example for a complete course), and tools.

Metadata elements fall into categories:

- ▲ General: resource identifier, title
- ▲ Characteristics: creation language, academic discipline
- ▲ Life cycle: versioning information
- ▲ Technical: format, hardware and software requirements
- ▲ Rights management: use conditions, price
- ▲ Relation: how this resource relates to other resources
- ▲ Meta-metadata: metadata creator, validation information

WHAT ABOUT XML?

XML figures heavily in the IMS plan. IMS created a specimen DTD as an XML binding of its metadata, and the released specification was accompanied by an array of sample DTDs, XML bindings, and example instances. Like other projects with similar goals, such as RosettaNet and BizTalk, IMS developers are using XML heavily. Specific instances of XML use include:

- ▲ The metadata wrapper attached to each resource.
- ▲ The default metadata binding (although resource developers are not required to use XML to achieve IMS compliance), for which conformance tests will be developed.
- ▲ The question bank/test specification will use XML for both question-and-answer syntax and grade reporting.
- ▲ The student profile being specified for management systems will use XML encoding for personal demographics, course administration, and grading.

One approach that IMS has postponed for now is the use of RDF. Although it is a framework for metadata interoperability and points toward a higher level of automation, IMS developers decided against its immediate use because it is not yet finalized.

MEASURING COMPLIANCE

IMS is working with the National Institute for Standards and Technology (NIST) on conformance issues. NIST, an IMS investor organization, is leading the effort to define conformance for the IMS metadata specification and providing guidance on establishing tests and testing programs. It is the IMS community itself that will decide what should be tested, and what "compliance" actually means. Testing will evolve over time, as need warrants. IMS could start small, with an online validation service similar to the W3C's HTML and CSS validators. Later, NIST may help IMS put a system in place, but it is not clear now if that means registrars and IMS-certified test facilities, or something less formal.

WHY IMS CAN SUCCEED

The end user wants an interoperable, open marketplace. As with any other standard, there is the issue of open **vs** proprietary systems. Users rightly favor an open, standards-compliant system because they can build their learning environment from best-of-breed components. Software developers and content providers should like IMS because a widely accepted standard creates a shorter path for entry to network-based training market. A small company in particular favors the standards approach, because it stands a better chance of finding a niche in a best-of-breed environment than in a suite-based environment dominated by industry giants.

But there is a "what if" here. The wildcard in the provider picture is merger mania. Mergers and acquisitions will take place, IMS or no IMS. What if there are only four or five learning companies left standing in a few years? (The consolidations might already be underway, as IBM's acquisition of Macromedia's Learning Group shows.) Would such companies care about IMS compliance, or would they rather go their own proprietary way? Despite the fact that providing a proprietary system limits the market to however many customers buy into that system, a big suite provider may well set its own standards and drag the marketplace along with it, with *de facto* standards that are accessible but not open.

Metadata might be the tonic for this cynicism. Metadata is for finding things, and what it finds can be open or proprietary. So metadata is going to be useful to everybody, regardless of who merges with whom. Dublin Core and ARIADNE are succeeding now, and there have been Dublin Corecompliant products on the market for several years. It grows because of its openness, which is encouraging to the proponents of IMS.

"On the provider side of the table, metadata involves both risk and cost."

RISKS AND COSTS

On the provider side of the table, metadata involves both risk and cost. Cost, because metadata done right goes far beyond the too-common web practice of <meta> tag stuffing. It involves time and effort. There is a financial cost to getting it right, a cost beyond the expected costs of product development. The "course" is no longer the only unit being managed. Now every component within it is a manageable unit (not a new idea to *GR* readers). Managing smaller units involves greater time and effort, and metadata creation assumes a higher percentage of total project costs. And there may also be some cost associated with compliance testing.

But the reward for this risk is the greater ease with which people can find and purchase resources. Given the chaotic nature of the Internet today, solid metadata will enable more people to become customers. And if they can manage products more easily, they become more willing customers. This sounds like an acceptable pairing of risk and reward.

There is less risk and cost on the users' side of the table. Who complains about an open, interoperable system backed by the Big Powers that takes the hassles out of building best-of-breed training? It's in corporate trainers' interests to read the IMS documents and start talking to their vendors about compliance.

As with any standard or specification, there is the possibility that even with all the muscle behind it, IMS will not catch fire, that vendors will not use it to enhance their offerings, or that users will react with a yawn. Trying to satisfy the needs and agendas of everybody can result in a diluted specification that is too broad to actually meet the needs of any of them.

A related issue is "will this really matter to me," where "me" is a corporate trainer. If the specifications and the process behind them seem too oriented toward IMS's roots in higher education, corporate trainers could very well lose interest. In that respect, it is good to have the DoD, the Aviation Industry CBT Committee, and others oriented toward job-skills training involved since IMS's early days.

RESULTS TO DATE: SO FAR, SO GOOD

IMS success will be measured by the speed and depth of its specifications' adoption. But first things first—the specifications need to be completed, released, and publicized. Compliant products can then appear. With the public release of the metadata specification and its supporting materials, IMS has taken the first big step, and IBM, Sun, and PeopleSoft are among the learning companies promising compliant products. This fast start can create the kind of organizational credibility that turns heads.

"IMS has thus far avoided the rancor that often plagues joint efforts." IMS has thus far avoided the rancor that often plagues joint efforts. There are big names here, often with competing interests, but the organization continues to make progress on a common set of specifications. If the coalition holds, the IMS seal of approval on a product will carry weight in the market.

IMS deserves credit for picking a winnable war with the metadata specification. Document computing standards can represent a sort of Holy Grail, rich with promises of interoperability, reusable content, and market growth. But we've seen many standards fail. IMS has an advantage here because every web user is a prospective IMS advocate and there are big players collaborating on IMS. Given its organizational goals, IMS can use the metadata specification as its calling card, or a way to build an audience for its more ambitious projects.

There is a future for IMS. Set up originally as a three-year program under the auspices of the EDUCAUSE National Learning Infrastructure Initiative, IMS recently announced that it will incorporate as a separate non-profit organization in January 2000. At the very least, this shows that IMS will complete its specifications, promote them, and work with the IEEE to formalize its specifications as standards.

The IMS web site is <u>www.imsproject.org</u>.

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INDUSTRY NEWS

Additional news is available at www.gilbane.com

ARBORTEXT ANNOUNCES ROUND-TRIP CONVERSION BETWEEN XML & WORD 8/31/99

Arbortext, Inc. announced the immediate availability of the 2.0 release of Epic, XML-based software that now supports two-way conversions between Microsoft Word and XML. With this feature and others, Epic now addresses three tiers of e-Content creators and authors within an organization, extending its capabilities across the enterprise. Epic's roundtrip conversion capability makes it possible for a wide range of users to create feature-rich XML content with Word. Organizations implementing XML-based systems are recognizing three tiers of users: power users, who need access to powerful XML creation and administration tools; occasional users, who need to work directly with XML and enterprise repositories; and Word users, who need to convert Word files to XML (and validate the content) and receive XML information in Word format. www.arbortext.com

INTRANET SOLUTIONS ANNOUNCES PDF TO HTML CONVERSION 8/31/99

IntraNet Solutions, Inc. announced a new PDF to HTML conversion capability for the Intra.doc! Management System. The new capability converts PDF documents into HTML (including those that have embedded GIF or JPEG images) and displays them in a standard Web browser without having to use Acrobat(R) Reader or other client software. Key benefits of the Intra.doc! and Adobe integration include the ability to view, navigate and search PDF documents with any browser without using Acrobat Reader. Users will get faster performance in browsing large files while still retaining the original fidelity of the PDF format. The PDF to HTML conversion capability also provides users with a toolbar so they can easily

navigate and search for content without invoking a helper application. Because the product is server-based and works with any browser and standard operating systems, like Windows NT and Sun Solaris, all users will be able to access, view and navigate PDF generated documents across the enterprise. The core Intra.doc! Management System automatically converts all major file formats to PDF; Intra.doc! Legacy, a paper-to-Web scanning solution, incorporates Adobe capture technology; and Adobe Forms fill-in functionality is integrated with Intra.doc! Forms to allow fast and easy forms fill-in and meta data extraction capabilities. The PDF to HTML Conversion capability for Intra.doc! is available now and pricing starts at \$15,000 USD and is sold as an optional module to the Intra.doc! Management System for Windows NT and Sun Solaris environments. www.intranetsol.com

ADOBE SHIPS INDESIGN 8/31/99

Adobe Systems Incorporated announced the immediate shipment of Adobe InDesign, a new page-layout application and the cornerstone of the company's new platform for professional publishing solutions. InDesign software, built from the ground up, is based on a new open, object-oriented architecture that is highly extensible, thus greatly reducing development cycles and enabling Adobe to rapidly evolve the platform. This architecture creates a core on which third-party developers and system integrators can deliver custom publishing solutions for magazines, advertising agencies, catalogs, retailers, design studios, and newspapers. www.adobe.com

This is the long awaited alternative to QuarkXPress, and ought to shake up the old DTP market a bit.

Adobe Unveils New Technologies 8/31/99

Adobe Systems also announced pre-release availability of two new technologies, Adobe PDF Merchant software and Web Buy, a feature within Acrobat Reader, to its partners for testing and product integration. The technologies will enable publishers, distributors, retailers and others to make electronic content available for distribution and sale over the Internet. The company expects Adobe PDF Merchant and Acrobat Reader software with Web Buy to speed the adoption of eBooks and the use of electronic documents among businesses and consumers. Adobe partners include a range of publishers, distributors, retailers, device manufacturers, technology and service providers, each of whom maintains a specialized and important link in the publishing and delivery chain. They will begin testing and implementing Adobe PDF Merchant technology to provide titles to be distributed and sold via the Internet. Among others, Adobe is working with: Barnes & Noble, Inc.; Everybook Inc.; Fatbrain.com; 1stBooks; Glassbook, Inc.; Iomega Corporation; Octavo Corporation; Pearson PLC; R.R. Donnelley & Sons Company; Salon.com; Seybold Publications; Simon & Schuster, Inc.; and Xerox Corporation. www.adobe.com

QUARKXPRESS & VIGNETTE TO INTEGRATE VIA XML & ICE 8/31/99

Vignette Corporation and Quark, Inc. announced the integration of QuarkXPress and Vignette StoryServer 4 software. The relationship between the company's promises to reduce the cost structures associated with using print content online. The announced integration will enable nearly instant deployment of QuarkXPress content on the web. At Seybold, Quark announced avenue.quark, a type of -XTensions software for QuarkXPress that will enable customers to easily tag their QuarkXPress content and extract that content in XML format. Simultaneously, Quark and Vignette announced that they have worked together to link avenue quark with Vignette StoryServer, allowing organizations to post rich content directly into the StoryServer

production workflow. Working together, the two companies' products provide a much needed, industrial-strength print-to-Web publishing solution. <u>www.quark.com</u>, <u>www.vignette.com</u>

This is important because of the vast amount of content companies have in Quark. Even if it isn't as easy as you might think to do the conversion, at least now there is a serious Quark supported path to do so.

EBUSINESS TECHNOLOGIES Announces DynaBase 3.2 8/31/99

eBusiness Technologies, a division of Inso Corporation announced version 3.2 of DynaBase, the division's XML-enabled Web content management and dynamic delivery solution. Targeted for shipment in September, DynaBase 3.2 includes enhancements in the management of large data sets and searching and dynamic document assembly, and will enable businesses to easily move beyond simple, homegrown Web sites to customized, sophisticated infrastructures for e-business. New features include: Persistent cache to ensure optimal performance by automatically restoring the cache whenever the server is restarted. Multiple Webs to enable users to divide their data into separate workspaces for different groups in the corporation, Fine-grained searching support for search of tagged documents with hierarchical structures, such as HTML and XML, and Dynamic document assembly that create dynamic, personalized pages by reusing and repurposing the same document for a variety of users, which keeps content under control by reducing the amount of files and source coding. DynaBase 3.2 is targeted for shipment in September 1999. Pricing for DynaBase starts at \$60,000. www.ebt.com

EBUSINESS TECHNOLOGIES ANNOUNCES MEDIABANK 2.6 8/31/99

eBusiness Technologies also announced version 2.6 of MediaBank, its media asset management system. Shipping in October, the upgrade will feature integration with IBM's DB2 Digital Library and Smart Storage's SmartStor Archive network storage solution. In addition, it will add the option of full-text searching capabilities with MediaBank FullSearch, as well as several other enhancements to increase overall speed and ease of use. MediaBank 2.6 will also provide enhanced cataloging performance, extended Quark 4.04 support and multiple updates to InterSep OPI. MediaBank 2.6 will be available in Workgroup or Enterprise Editions. It runs on Sun Solaris, SGI IRIX, IBM AIX and Windows NT servers. Enterprise database support includes Oracle, Microsoft SQL Server and IBM DB2. www.ebt.com/mbank/index.htm

ENIGMA ANNOUNCES INSIGHT 5.0 8/31/99

Enigma, Inc., announced the INSIGHT 5.0 product suite update. Enigma's INSIGHT content publishing suite delivers unified and highly functional Web and CD-ROM publications from any combination of PDF, FrameMaker, word processing, SGML/XML, and graphic/image source data. INSIGHT automates the content assembly and e-publishing process, integrating content with a wide set of integrated navigation, view, and search tools. New features within INSIGHT 5.0 include an Enhanced Illustrated Parts Catalog (eIPC), FrameMaker plus PDF support, Web user interface enhancements and Web annotation capabilities. In addition, Enigma's "Distributed Intranet" capabilities have been further automated for delivering e-publications to customer intranets and corporate portals. Incorporated within the INSIGHT 5.0 suite are packaged add-on modules and developers toolkits for integrating INSIGHT e-publications to ERP and DMS systems. www.enigma.com

CASCADE COMMERCE SERVER & PROFILE SERVER INTRODUCED 8/31/99

Cascade Systems Inc. introduced two new products, Cascade Commerce Server and Cascade Profile Server, at the Seybold San Francisco Conference. The systems are components of Cascade's Cross-Media Relationship Management solution and are designed to give e-merchandisers the ability to collaborate with their print counterparts to analyze, plan, create, and manage cross-media advertising, merchandising and promotional campaigns. The system enables businesses to manage their entire on-line selling process, from updating their inventory and product offerings to order fulfillment and following-up with personalized promotions. Cascade Profile Server offers Internet profiling and analysis tools for building customized one-to-one marketing programs for Internet, print, and other media. The system enables web merchants to gather rich, accurate profiles of Web site visitors. Optional decision support tools help online marketers better understand their Web audiences through detailed analysis. For businesses that need to support multiple storefronts, Cascade's Multi-Brand Storefront option supports multiple customized storefronts using a shared infrastructure. www.cascadenet.com

This is a good example of a trend evident at the recent Seybold event (and elsewhere of course!) of the converging of print publishing and web publishing technology around e-commerce applications.

CASCADE TO INTEGRATE SOFTWARE FROM ZAPOTEC & ADOBE 8/31/99

Cascade Systems Inc. and Zapotec Software announced an agreement to coordinate their marketing, sales and development efforts. Under the alliance, the two companies will combine the functionality of the Cascade Merchant Publishing Solution and Zapotec's CO-OP EASY application. Jointly, they will provide catalog, retail and direct marketing companies with a way of managing all aspects of merchandising programs. The Cascade Merchant Publishing Solution enables merchants to expand and enhance customer interaction through multiple media channels, including print and the Internet. Zapotec's CO-OP EASY software enables retailers and catalogers to effectively manage, track and claim trade allowance funds offered by manufacturers, thereby increasing sales and profitability. In a separate announcement Cascade announced that the company has incorporated Adobe InDesign into the Cascade Merchant Publishing Solution. www.cascadenet.com

POET JOINS ALLAIRE ALLIANCE, DEVELOPS PLUG-INS FOR COLDFUSION 8/31/99

POET Software announced that they have become a member of Allaire Corporation's Allaire Alliance Partner program. POET Software has developed Web Plug-ins that integrate POET's Content Management Suite (CMS) 2.0 with Allaire's ColdFusion to provide more flexible and robust solutions for Web-based XML/SGML content management and delivery. The CMS Web Plug-ins for ColdFusion allows dynamic, Web-based XML and SGML management and delivery to any Internet browser. POET's Content Management Suite version 2.0 is the industry's only secondgeneration XML content server. Founded on POET's object-based XML technology, CMS 2.0 simplifies XML publishing for the technical documentation market. The CMS Web Delivery Plug-in works with ColdFusion to dynamically deliver SGML/XML content to the Web. By converting SGML/XML to HTML, applying presentation and navigation on the fly, the need for HTML page management is eliminated. In addition, the CMS Web Delivery Plug-in leverages SGML/XML's separation of content from formatting to let publishers create multiple content views for personalized content. <u>www.poet.com</u>.

POET & SOFTQUAD FORM STRATEGIC ALLIANCE 8/31/99

POET Software and SoftQuad Inc. announced a strategic alliance to integrate SoftQuad's XMetaL XML authoring environment and POET Content Management Suite (CMS). The integrated products will provide customers with a complete solution for developing, managing and publishing XML content for a wide variety of e-Business applications, including web publishing, knowledge management and web-based product information. <u>www.poet.com</u>, <u>www.softquad.com</u>

HYNET ANNOUNCES DIRECTIVE 2.5 8/31/99

Hynet Technologies announced the availability of HynetDirective 2.5, an XML-based content management system that transforms static document files into dynamic, reusable Information Units (IUs) for publishing to the Web and print. Hynet Directive 2.5 is designed to rapidly build Dynamic Customer Content (DCC) -- information tailored to the specific needs of individual customers -- for publishing to multiple mediums. Hynet Directive 2.5 is a single source system that captures documents created in familiar word processing applications, such as Microsoft Word, Adobe FrameMaker and XML and transforms the data blocks (paragraphs, graphics, definitions) within them into Information Units. Then, by attaching specific metadata to the IUs, they are essentially "tagged" and stored in a repository that can be accessed across the corporate environment. Information can then be recalled by virtue of the "tag" and the IUs can be reused and repurposed to create varied pieces of corporate knowledge. The collateral can take the form of a Web site or print. www.hynet.com.

FUTURETENSE & E-CONTENT Partner 8/31/99

FutureTense, Inc. and systems integrator E-Content Corporation announced that E-Content has joined the FutureTense Business Partner Program. E-Content will integrate FutureTense's Internet Publishing System (IPS) at corporations with high-end Web sites. FutureTense and E-Content are currently planning several joint projects where they will be installing IPS. www.futuretense.com, www.econtentcorp.com

Adobe & Xerox to Integrate Xerox ContentGuard with PDF 8/31/99

Adobe Systems Incorporated and Xerox Corporation announced a strategic initiative to integrate Adobe PDF technology with Xerox ContentGuard rights management solution. This alliance will enable publishers to implement secure e-commerce of PDF documents, while allowing end-users to access these documents in the native Acrobat Reader. Adobe and Xerox will also jointly support the definition and promotion of an open standard for rights specification design around the needs of the publishing industry. Initial availability of this integration will be this fall, and offered as a free upgrade to existing ContentGuard customers. www.adobe.com. www.contentguard.com.

INXIGHT INTRODUCES SUMMARY Server 8/31/99

Inxight Software announced Inxight Summary Server, one of the many planned building blocks in its new family of Open Portal Products, knowledge extraction and information visualization software specifically designed for corporate intranet users to increase productivity and the serendipitous discovery of useful information. Inxight Summary Server automatically and instantly extracts key sentences from a document and presents them to the viewer in a summary format. These summaries let users quickly and accurately preview the contents of a document without having to first download and read the entire contents. Additionally, summary length and emphasis can be customized to satisfy specific user needs. Summary Server is available in eight languages, making it ideal for use in global intranets, document repositories, or knowledge management systems. As with other products in Inxight's Open Portal Products, Inxight Summary Server contributes to pervasive preview by helping intranet users identify the right information in a fraction of the time it takes today. Exploiting advanced computational linguistics algorithms developed at Xerox PARC and Xerox Grenoble, Inxight Summary Server can also present summaries based on a user's search query changing the overall document summary to a summary that emphasizes the user's interest. Inxight Summary Server is easily installed within a company's web servers and other existing portal platforms such as search engines, collaboration platforms and databases. Inxight Summary Server will be available in October 1999. Summary Server is priced at \$24,995 per server. www.inxight.com

INXIGHT SITE LENS ALSO ANNOUNCED 8/31/99

Inxight Software also announced Site Lens Studio, one of the first of many planned building blocks in the Open Portal Products family of products for knowledge extraction and information visualization specifically designed for corporate intranet users to increase productivity and the serendipitous discovery of useful information. With no easy way to find information on corporate networks and intranets, users spend more time reading through massive amounts of information rather than making use of it. Site Lens Studio creates interactive site maps, called Site Lenses, that display contents in relation to each other enabling users to find relevant information quickly. Users can look ahead and preview webbased information without having to click through dozens of pages "in transit" to the page they really want. When they find something of interest, a double-click downloads the page or document they want. The software product is also highly scalable, designed to grow with an organization's needs. Site Lens Studio will be available in October 1999. Site Lens Studio is priced at \$4,995 per server. Purchasers are licensed to publish as many Site Lenses as they like to the server, as well as copy the Studio client for use by anyone creating and publishing Site Lenses to the server. www.inxight.com

XEROX SHIPS RIGHTS MANAGEMENT SOLUTION FOR DIGITAL DOCUMENTS 8/30/99

Xerox Corporation announced availability of ContentGuard, a comprehensive new product suite designed to fuel document e-commerce for the publishing market. Combining Xerox' expertise in the document arena with extensive rights management research undertaken at PARC, the solution enables persistent protection and monitoring of digital content – preventing copyright infringement and unauthorized redistribution, while tracking customer usage. The ContentGuard family comprises: ContentGuard Publisher converts documents from many popular file formats, including Microsoft Word and PowerPoint and Adobe Acrobat PDF to encrypted Self-Protecting Documents; ContentGuard Marketplace is an online storefront that integrates with popular e-commerce servers; ContentGuard Rights Server is a back-office server for handling all operations associated with ongoing rights tracking, authorization and enforcement. www.xerox.com

Are publishers and consumers ready for this yet? Earlier attempts haven't caught on, but it is only a matter of time. This looks like a practical enough approach.

WORLDWEB.NET INTRODUCES QUARK INTERFACE &

APPOINTMENTS *8/30/99*

Worldweb.net of Alexandria, Virginia announced the introduction of its QuarkXPress Xtension, an optional feature set for Expressroom 6.0 that enables real-time Web publishing directly from QuarkXPress and an Expressroom Internet publication so professional Web and print publishers can reduce redundant processes, improve efficiency, streamline workflow and maintain greater control over their Internet content. The Expressroom 6.0 QuarkXtension is scheduled for release in the fourth quarter of 1999. Worldweb.net of Alexandria, Virginia also announced the appointment of Jay Greenwald as Chief Operations Officer, and the appointment of Heidi Heiden to the company's Board of Directors. www.worldweb.net

SCOTT KADLEC JOINS MESAVIEW, INC. BOARD 8/30/99

MesaView, Inc. announced the newest member of its Board of Directors, Scott Kadlec, former President of PC DOCS Inc. and Vice Chairman of PC DOCS Group International. Mr. Kadlec cofounded CMS Data Corporation a successful software developer of financial software for the legal market, in 1979. In 1990 he founded PC DOCS Inc., developer of the world's most widely used document management software. PC DOCS Inc. was part of PC DOCS Group International Inc., which was a publicly traded company that was recently sold for approximately \$200 million. Mr. Kadlec recently retired from his position as the Vice-Chairman of PC DOCS Group International Inc. Mr. Kadlec holds a Ph.D. from Florida St. University. www.mesaview.com

SOFTBOOK PRESS INTRODUCES ENHANCED SOFTBOOK READER & WORD IMPORT 8/30/99

SoftBook Press, Inc. announced an enhanced version of its SoftBook Reader. Designed specifically to meet the demanding needs of business users, this enhanced and SoftBook Reader includes significant new functionality such as Ethernet connectivity, increased storage capacity for lengthy corporate documents, and compliance with the public draft of the Open eBook specification. Available in Q4 1999, the Enterprise SoftBook Reader with Ethernet is priced at \$699.95 with up to 10,000 pages of storage capacity (16 MB). Higher storage capacities are also available. SoftBook also announced Personal Publisher, a software tool for both Windows and Macintosh platforms that enables users to take their existing Microsoft Word documents and save them as files for reading on a SoftBook Reader. These files, SoftBook Editions, are fully compliant with the public draft of the Open eBook specification. www.softbook.com

INFODATA STAFFS UP 8/27/99

Infodata Systems Inc. is expanding its business development staff to promote growth of its pharmaceutical, financial services and government client list. James P. McCaslin has joined Infodata in the newly created position of Director of Special Programs. Richard E.H. Julien III, is a newly named Senior Systems Consultant who will also concentrate on intelligencerelated contracts. Brendan Babbington, is a newly named Account Manager, Philip J. Osip has joined as a Senior Systems Consultant, and William Lynch, is appointed to the new position of Account Manager. www.infodata.com

LIVEPAGE LAUNCHES SOLUTION PROVIDER PROGRAM 8/26/99

LivePageCorporation announced the launch of the LivePage Solution Provider Program. The Program offers Value Added Resellers, System Integrators and Consultants a comprehensive suite of sales, marketing and technical resources to accelerate the development of corporate web sites and information portals. In conjunction with the program launch, LivePage announced the first ten members of the LivePage Solution Provider Channel. Leading organizations in the fields of interactive web services, XML, electronic documentation as well as vertical application providers have already joined the program. At the time of the announcement, LivePage Solution Providers included: Systems Documentation, Inc. (SDI), CALIAN Technology, Soza & Company, Ltd., OMICRON Consulting, Computing Art, Gralen Digitex Inc., ITASCA, Paradigm Interactive, WebFeats, and VBM. www.livepage.com

OBJECT PUBLISHING SOFTWARE ANNOUNCES CONTENT & CATALOG MANAGEMENT SYSTEMS 8/26/99

Object Publishing Software announced two new products in its suite of ObjectPublisher solutions for distributors, manufacturers, and other supply-chain enterprises to market and sell large, diverse product lines. **ObjectPublisher** Content Management System is an Oracle/Java/XML-based system for managing complex product information over the Internet via dynamic forms. ObjectPublisher Catalog-on-Demand is a 100% automated production system that creates custom Web and print catalogs over the Internet. These new products complement **ObjectPublisher Design Studio** for automating the layout and formatting of catalogs, directories, and other complex and data-rich publications for Web, CD, and print. OP Design Studio publishes from any database via ODBC drivers. OP CMS is an object-oriented design for product information implemented in an Oracle database. Its benefits are its ability to maintain a unique set of rich attributes for any class of product, and to dynamically generate "smart" input forms thus setting the stage for

community authoring on the Internet. OP Catalog-On-Demand consists of several components, including OP Java Browser, OP Render Server, and OP Render Queue Manager (RQM). OP Catalog-On-Demand allows endusers to select product information via the Internet into a "shopping cart" to create their own custom catalog. Once produced, the requestor receives this catalog either as a bookmarked PDF file or as a Java-based Web publication. www.objectpublish.com

OPEN TEXT ACQUIRES PSSOFTWARE 8/26/99

Open Text Corporation announced it has acquired all of the shares in PSSoftware Solutions Ltd. (PSS). PSSoftware, located in Ottawa, is one of the original records management companies. As part of the merger, Open Text will create a records management division led by David Gibbard, CEO of PSSoftware. www.pssoft.com, www.opentext.com

INSO ANNOUNCES RELEASE OF OUTSIDE IN 2.0 8/25/99

Inso Corporation's Information Exchange Division announced availability of Outside In Server 2.0, a significant enhancement of the industry's first Web server-based, real time HTML conversion software. Outside In Server supports on the fly conversion to HTML, GIF and JPEG of virtually any business document including files from the latest Microsoft, Lotus and Corel Office suites. Enhancements to Outside In version 2.0 include the ability to convert Microsoft Office 2000 file formats; integration with Apache NT Web Server (version 1.3.4); and, the ability to publish from remote virtual directories in Microsoft Internet Information Server 4.0. Further, Outside In Server leverages Windows NT and IIS security to control Web access to your documents. www.inso.com

TUMBLEWEED DELIVERS IME PERSONALIZE 8/24/99

Tumbleweed Communications announced IME Personalize, software specifically designed to help marketers retain and re-engage online customers. IME Personalize is an application built on top of Tumbleweed Integrated Messaging Exchange (IME), a set of products and services that leverage the Internet and existing e-mail to create a secure, trackable online communications channel. IME Personalize extends this rich communications channel by enabling a company committed to secure online customer communication to deliver targeted marketing messages to its customers via the same means. IME Personalize enables marketers to add marketing messages to the secure online communications that Tumbleweed IME delivers. With the straightforward, browser-based interface, non-technical users can leverage personal profile data and preferences to define and transmit a variety of targeted marketing messages to their customers automatically. www.tumbleweed.com

INSYSTEMS ANNOUNCES LATEST VERSION OF CALLIGO ENTERPRISE 8/24/99

InSystems Technologies, Inc. announced its latest version of Calligo Enterprise is shipping. This Web-centric document automation solution allows organizations to create, manage and distribute error-free, customized documents enterprise-wide. Calligo Enterprise includes add-on options, Customizer and Dispatcher. Calligo Dispatcher is a high volume, batch processing component that allows users to generate and print large numbers of documents in an unattended, automated environment. Maximizing existing PCs and servers, clients can now fulfill printing requirements overnight or in background mode using one or many different printers. A second add-on option, Calligo Customizer, allows assembled documents to be amended and edited in an interactive, yet very controlled fashion. It is a unique option for creating and managing complex proposals, negotiable agreements, manuscript endorsements and custom correspondence. Pricing is dependent

on seats, servers, and options purchased. <u>www.insystems.com</u>

HUMMINGBIRD & METASTORM ANNOUNCE COLLABORATIVE WORKFLOW SOLUTION 8/19/99

Hummingbird Communications Ltd. announced a strategic alliance with Metastorm Inc. Hummingbird will embed Metastorm's e-work collaborative workflow software within its existing document management solutions and incorporate Metastorm technology in ongoing Enterprise Information Portal development. This alliance will give Hummingbird users a single consistent environment to automate business processes, enable workgroup collaboration, and improve the capture and reuse of corporate knowledge. <u>www.metastorm.com</u>, <u>www.humminbird.com</u>

ESPS COREDOSSIER 4.0 TO EMBRACE DOCUMENTUM 8/18/99

ESPS, Inc. announced that its CoreDossier 4.0 software offers expanded functionality to users through compatibility with Documentum, Inc.'s new content management platform, Documentum 4i. Documentum, Inc., introduced its new platform in June 1999 to manage the content creation and delivery for both corporate and e-business portals. ESPS' e-Compliance software, which publishes to the Internet, corporate intranets, directly to paper or to industry-specified standards in formats like HTML, XML, PDF and TIFF, complements Documentum 4i by allowing users to create cohesive compliance publications with source content managed by Documentum. The ESPS CoreDossier product suite is designed to deliver e-Compliance management solutions so customers can efficiently plan, assemble, manage, publish and share regulatory submissions and other mission-critical business compliance information. CoreDossier publications may be published into Documentum maintaining cross-reference links between publication components. www.esps.com

INTERWOVEN RELEASES OPENDEPLOY 3.0 8/16/99

Interwoven, Inc. announced the general availability of OpenDeploy 3.0 software. The new release enables content replication and syndication capabilities across distributed networks of production servers. With OpenDeploy 3.0, Web content can be distributed and synchronized in automated, scheduled and transactional deployments. This permits more timely content, lower operating costs and more reliable site administration so that businesses gain the security, scalability and flexibility they need. A new feature in OpenDeploy 3.0, known as event trigger support, allows organizations to execute external programs and scripts before, during and after a deployment. This allows select employees, customers and business partners to be notified by e-mail when new content is added to certain pages. It also allows system administrators to be notified in the event of a failed transfer. www.interwoven.com

ALPNET & SUN TO DEVELOP LANGUAGE TRANSLATION INFRASTRUCTURE SOLUTION 8/16/99

ALPNET Inc. and Sun Microsystems, Inc. announced that the companies have agreed to cooperatively develop an innovative language **Translation Management Computer** Infrastructure (TMCI) solution for the Solaris Operating Environment. The new TMCI solution allows multi-national companies to quickly and easily manage language translation throughout their global operations from centralized servers. With the new TMCI solution, global companies can quickly deploy familiar, translated contents through the Internet to their employees, partners, and customers based upon ALPNET's EP technology, the new language translation solution is expected to be deployed first at Sun - and productized by ALPNET - in the fourth quarter of this year. The TMCI solution supports established and emerging Internet standards like TCP/IP HTTP, Java and XML technologies. Additionally, TMCI supports a range of languages (scripts that are included in the Unicode character set), major text formats and

importation and exportation of legacy translation memory formats, including TMX and Trados. <u>www.alpnet.com</u>

EXCALIBUR ANNOUNCES PLUG-IN FOR NOTES/DOMINO 8/9/99

Excalibur Technologies announced the Excalibur RetrievalWare Power Search Plug-in' for Lotus Notes that will deliver advanced search and retrieval functionality to Lotus Notes Domino. The product was announced in conjunction with the release of Excalibur RetrievalWare 6.7, the latest version of the company's enterprise knowledge retrieval solution Lotus Notes/Domino customers may now elect to choose the new RetrievalWare Power Search Plug-in which enables faster indexing and better performance for simultaneous indexing and retrieval from distributed Lotus Notes servers. It provides plug-in access to Excalibur's knowledge retrieval system, enabling advanced conceptbased, natural language searching on more than 200 standard and proprietary document formats including Microsoft Office and other groupware and document repositories that frequently co-exist in Lotus Notes environments, all from a single query. www.excalib.com

WEBB ADDS COREL IMAGES TO XML PUBLISHING SERVICE 8/5/99

Webb Interactive Services. Inc. and GraphicCorp, a division of Corel Corporation announced a partnership wherein Webb will license images from GraphicCorp's extensive digital image library and co-market GraphicCorp's new ClipartCity.com web subscription services. The image library, providing a large store of digital clipart, animations and photos, will be integrated into Webb's template-driven platform for distribution partners to create a large variety of web page templates. This will be used by small businesses to easily choose unlimited styles and designs for their websites. In addition to a template-based approach to produce unique HTML-based websites and advertising content, CommunityWare/XML Publisher creates an XML repository of the content, thereby creating a

foundation for enhanced merchant and consumer services. For instance, content can be aggregated to create comparison-shopping, publish dynamic specialty shopping guides, and create special offer and promotion announcements. <u>www.graphiccorp.com</u>, <u>www.web.net</u>

GLOBAL COMPLIANCE ANNOUNCES ENTERPRISE DESKTOP FOR DOMINO.DOC 7/27/99

Global Compliance, LLC announced Enterprise Desktop for Domino.Doc, a customizable Windows interface for Domino.Doc. Using Enterprise Desktop, line-of-business personnel throughout an enterprise simply profile any electronic document according to an area, subarea, document type, etc. and it is automatically stored inside the Domino.Doc library. Since Enterprise Desktop remembers which documents each user has been working on, they can be quickly retrieved. For more complex document research situations, users can conduct profile, full-text, or combined searches. Enterprise Desktop includes innovative features like complete email integration, project foldering, quick viewer, Windows Explorer integration, and support for mobile users. Built as a Visual Basic application, and optionally licensed with source code, Enterprise Desktop gives organizations an alternative interface to the Lotus Notes and Web browser interfaces that come standard with Domino.Doc. Customers can further tailor the interface and easily integrate other business applications such as ERP, financial, legal, and compliance systems with their document management system. www.globalcompliance.com

SOFTQUAD & OBJECT DESIGN FORM STRATEGIC ALLIANCE 7/27/99

SoftQuad Software Inc. and Object Design, Inc. announced a strategic alliance to integrate and jointly market SoftQuad's XMetaL XML authoring environment and Object Design's eXcelon XML eBusiness information server. The integrated products provide customers with a complete solution for developing, managing and publishing XML content for a wide variety of eBusiness applications, including knowledge management, Web product catalogs, Web publishing, etc. SoftQuad has built a special XMetaL Integration Toolkit for eXcelon, providing users with an extremely efficient way to store and retrieve XML documents. eXcelon also automates the security, administration and on-line publishing of XMetaL-generated content. <u>www.softquad.com</u>, <u>www.objectdesign.com</u>

OPEN MARKET PARTNERS WITH RENAISSANCE MULTIMEDIA 7/26/99

Open Market, Inc. announced that Renaissance Multimedia, an interactive agency based in New York City's Silicon Alley, will be reselling LiveCommerce, using the product to develop industrial-strength catalogs for their customers. www.rcac.com, www.openmarket.com

Open Text to Acquire Microstar 7/26/99

Open Text Corporation announced it has entered into an agreement with Microstar Software Ltd to acquire all the outstanding shares of Microstar for \$2.10 per share payable in cash. Microstar, which had revenues of \$6.2 million for its last fiscal year ended January 31, 1999. Microstar has agreed not to solicit other offers and has agreed to pay Open Text a breakup fee equal to approximately 4% of the equity value of Microstar if the transaction is not completed in certain circumstances. In addition, Microstar has granted an option to Open Text, exercisable only in the circumstances in which the break-up fee is payable, to purchase treasury common shares equal to 19% of the issued and outstanding shares of Microstar at an exercise price of \$2.10 per share. The offer is subject to standard conditions including at least $66\ 2/3\%$ of the shares being tendered to the offer, regulatory approvals and due diligence. Shareholders holding in the aggregate approximately 35% of the shares of Microstar have agreed to tender their shares to the offer. www.microstar.com, www.opentext.com

As we went to press Open Text had bought the vast majority of shares, precluding any other offers.

Adhesive Software Introduces Web-Site Management Tool for E-Business 7/23/99

Adhesive Software, Inc., introduced an ebusiness system designed to quickly deploy and easily manage all aspects of an online business. Adhesive's new Bizflash e-business system is suitable for both "business-to-business" and "business-to-consumer" operations. Bizflash helps manage the entire online selling process, from updating product offerings to capturing initial transaction data to fulfilling orders and following up (including cross promotion). Bizflash also has the unique ability to "syndicate" an e-business to third-party Web sites. Products, order processes, brand messages -the entire online business experience -- can be provided to affiliates, marketing partners, distributors and others, either exactly as is or using elements of the affiliate's "look and feel." Bizflash is based on Adhesive's core technology, called WebOS, a Web application server utilizing an object-based management system that permits users to create data, applications and other files that can be added to any Web page. Objects can be text files, graphics, multimedia files, audio, video, database queries, surveys, Java applets, custom C and Perl programs or command line scripts. Text, video and image files are databased when published and are fully retrievable. sales@adhesive.com.

EASTMAN ANNOUNCES WMX Solution Provider Program 7/23/99

Eastman Software's Work Manager (WMX) Collaborative Business Unit announced the launch of its new WMX Solution Provider Program for its line of collaborative knowledge management products. This new program will provide participating partners with expanded revenue opportunities from their existing Exchange customers and bring added value to both existing and potential Exchange customers. Eastman Software will unveil the details of the new WMX Solution Provider Program during its multi-city partner recruitment program beginning in late August. Currently, Eastman has more than 50 partners participating in the program including: The Computer Solutions Company (TCSC), WSB Technologies and Systems Farm, Inc. www.eastmansoftware.com/wmx.

DOCSPACE ANNOUNCES PDQ.NET TO OFFER DOCSPACE 7/21/99

The docSpace Company announced the newest addition to its docSpace Service Bureau Program (dSB) - PDQ.net, Inc. The largest fullservice Internet Service Provider (ISP) in Houston, Texas, PDQ.net will offer co-branded docSpace carrier class file services to its clients, including several Fortune 500 corporations. The docSpace services will enable secure businessto-business communication for PDQ.net's clients by offering mobility, collaboration tools, and a replacement for services like FedEx and UPS without requiring any software. PDQ.net will offer co-branded versions of docSpace Express (Web courier) and docSpace Drive (virtual hard drive). The services will first be available through MyPDQ.net, the company's new consumer portal site. PDQ.net is also targeting business customers with docSpace by offering it in conjunction with their DSL high speed Internet access services. <u>www.docSpace</u>.com, www.pdq.net

LOTUS & NOVELL ANNOUNCE NOTES & DOMINO SUPPORT FOR SINGLE SIGN-ON DIRECTORIES 7/21/99

Lotus Development Corp. and Novell Inc. announced that they have created a single logon solution using Novell Directory Services (NDS) for the Lotus Domino servers and the Lotus Notes client. With Novell Single Sign-on, a user need only log onto a computer network once with a single NDS password to access all enterprise applications, regardless of the network platforms on which those applications reside. Novell Single Sign-on simplifies the enduser computing experience by eliminating the need for users to remember and input multiple passwords. It also can help companies save money by simplifying password management processes and reducing the number of password-related help desk calls. In addition to Notes R4.6 and Notes R5 users, the Lotus Domino R5 servers also can authenticate Web

browser-based users of NDS, using LDAP as the authentication protocol. Novell Single Sign-on is available from Novell to customers of Novell NetWare 5. <u>www.novell.com</u>, <u>www.lotus.com</u>

Allaire Spectra Unites Content Management, E-Commerce & Personalization 7/21/99

Allaire Corporation introduced Allaire Spectra, a packaged system for content management, ecommerce and personalization that enables corporations to embrace the Web as a strategic center of their businesses. In beta testing today at over 170 sites, Allaire Spectra is designed to use best-practices established by successful Internet businesses, uniting content, commerce and customer interaction capabilities into a common model for enterprise-wide Web systems. Incorporating best practices in building and running large-scale Web businesses, Allaire Spectra is based on the concept of "transactive content" -- systems that combine a tight relationship between the management of Web content assets, services that extend a company's business models into e-commerce, and the ability to deliver this package to the customer in a rich, personalized manner. Allaire Spectra is designed around a model and methodology for building large scale content and commerce systems that embrace the idea that every participant in an enterprise has a unique set of requirements to be productive in their use of the Web. This spectrum of participants spans system administrators, developers, designers, business managers and users, as well as customers, partners, and site affiliates. With Allaire Spectra implemented across an enterprise, each member of the spectrum can use the Web in a logical way. For example, it gives business managers and users a rich set of Web-based tools for managing workflows and security roles, conducting analysis and reporting on the business, and selfmanaging content and commerce assets without any IT intervention. The six core services of Allaire Spectra include: Content Management, Workflow and Process Automation, Roles-based Security, Personalization, Business Intelligence, and Syndication. Allaire Spectra, which runs on Windows NT and Solaris, is currently in beta. The product is expected to ship in Q4 1999. A

bundled offering that includes servers, tools, training, consulting and support will be priced at approximately \$100,000. Standard pricing for Allaire Spectra will be \$7,495 per server and requires ColdFusion Enterprise Application Server. <u>www.allaire.com</u>

VIGNETTE & VIANT FORM STRATEGIC ALLIANCE 7/21/99

Vignette Corporation and Viant Corporation announced a strategic alliance to help companies build effective Internet businesses. Together, they will address the broad-ranging and complex needs of global companies seeking to transform their businesses through the Internet. By combining Vignette's StoryServer technology platform with Viant's ability to tailor technology to meet business goals, the combined team will help businesses compete online. The companies plan to offer full solutions that serve the needs of Fortune 1000 companies, new spin-off companies, and startup companies that are building a presence on the Web. Viant will maintain a core set of consultants trained and experienced in Vignette products and technologies. The partnership will allow Vignette and Viant to build the right solution for customers more quickly, while providing these customers with confidence in the underlying technology and services. www.viant.com, www.vignette.com

OAGI & MICROSOFT ANNOUNCE PILOT PROJECT 7/21/99

The Open Applications Group Inc. (OAGI), a nonprofit industry consortium composed of business software component interoperability stakeholders, and Microsoft Corp announced a pilot project to review migration of the Open Applications Group Integration Specification (OAGIS) XML Definitions to the BizTalk Framework specifications. The XML working group within the OAGI, which includes Candle Corp., Compaq Computer Corp., HK Systems Inc., IBM Manufacturing Systems, Microsoft, NEC Corp., PeopleSoft Inc. and PricewaterhouseCoopers, plans to update the current OAGI XML documents, which were developed under the W3C XML 1.0 specification, by prototyping them under XML-schema and BizTalk Framework specifications. The goal is to produce a compatible set of XML-schema documents and publish them in the BizTalk.Org library. The OAGI plans to be in a position to have the prototyping and architecture issues completed as soon as possible after the W3C finalizes the XML-schema recommendation currently in review before that group. Once the XML-schema specification, which the BizTalk Framework will support, is completed and formally recommended by the W3C, the OAGI plans to very quickly publish its work under the XML-schema format and, subsequently, the BizTalk Framework. www.biztalk.org/, www.microsoft.com/industry/biztalk/, www.openapplications.org/

XMLSOLUTIONS ANNOUNCES PARTNERSHIP WITH LISLE TECHNOLOGY PARTNERS 7/21/99

XMLSolutions Corporation (XMLS) announced today that they have signed Lisle Technology Partners (LTP) as a strategic development partner. As a strategic partner, LTP will be involved in assisting XMLSolutions in technical product direction, as well as a resource partner for implementing the product strategy. The first project LTP will work on for XMLSolutions is the Exeter family of XML-based e-commerce products, a suite of products specifically designed to fulfill the objective of business-tobusiness e-commerce. The Exeter product set includes the Exeter XML Server, Exeter Ecommerce Engine and Exeter EDI Parser. This application suite eliminates the manual processes of trade by enabling computer applications and humans to exchange business documents written in XML. www.xmls.com, www.lisletech.com

Bell Atlantic to Deploy Wireless Application Protocol 7/21/99

BellAtlantic Mobile operation will use Wireless Application Protocol (WAP) to give its customers access to electronic mail and information from their cellphones and to simplify phone upgrades. Bell Atlantic will deploy Phone.com, Inc.'s microbrowser and associated server software with Motorola Inc.digital phones. The service should be commercially available early next year. Customers will need to buy the new Motorola phones in order to use it. Using Phone.com's UP.Browser, phone subscribers will be able to view specially tailored Internet and intranet content on the display screens of their phones. The micro-browser works with Phone.com's UP.Link server software, which delivers content using wireless markup language (WML) rather than the hypertext markup language (HTML) used for most World Wide Web content. Bell Atlantic is at least the fourth US wireless carrier to announce plans to use Phone.com's microbrowser. Sprint PCS and Nextel have announced plans for trials in the fourth quarter. SouthernLink, a regional carrier, has also announced plans for the technology, the Phone.com spokesman told Newsbytes. www.bam.com

CROWE CHIZEK DEVELOPS DOCUMENT SOLUTION FOR BAAN USERS 7/21/99

Crowe Chizek recently released Electronic Document Warehouse (EDW) for Baan, a highperformance, document storage, retrieval and management solution that provides a bridge between Baan ERP and FileNET Panagon integrated document management (IDM) software. The product was developed by Crowe Chizek to offer Baan users the powerful information management capabilities of FileNET to manage correspondence, bills of lading, accounting records, maintenance records, hazardous material data (MSDS), engineering drawings, quality documents and literally any paper or electronic document. With this solution, scanned or imported electronic documents are immediately available for viewing and processing by Baan users or other employees using a Web browser. EDW for Baan allows companies to manage the unstructured information outside of their ERP system by giving them access to FileNET's imaging and document management software to provide the storage, retrieval and database management services needed for enterprise-wide document management applications. The solution is designed for distributed client/server and Webbased environments and features a scalable

architecture for easy expansion of document imaging and storage. A free CD is available <u>www.crowechizek.com</u>

KOFAX INTRODUCES SUPPORT FOR DOCUMENTUM 41 7/21/99

Kofax Image Products has shipped a new release script that integrates Ascent Capture 3, the company's document capture application, with Documentum 4i, Documentum Inc.'s content management platform for corporate and ebusiness portals. The release script also integrates Ascent Capture with Documentum's prior product release, Enterprise Document Management System (EDMS 98). Ascent Capture 3's DDI architecture combines document capture, data capture and Internetbased distributed capture in a single application. It's the only tool required to digitize paper documents at remote locations, extract data from them and insert that information into workflow, document management and Web publishing applications. Documentum 4i is a content management platform that dynamically manages all facets of content creation and delivery for corporate and e-business portals. Kofax has partnered with Documentum for several years to develop solutions that integrate paper and electronic sources of corporate knowledge. The new 32-bit Ascent Capture 3 release script for Documentum provides full functionality for both the 4i content management platform and the EDMS 98 client/server-based document management platform. The Ascent Capture 3 release script for Documentum 4i and EDMS 98 is free and may be downloaded now at www.kofax.com

OPEN MARKET PARTNERS WITH SPEECHWORKS 7/20/99

Open Market, Inc. announced that it has partnered with SpeechWorks International, Inc. Open Market will be working with SpeechWorks to sell commerce solutions coupling Transact with SpeechSite, a new solution announced today by SpeechWorks, to provide customers with a single speech activated system that gives customers the ability to conduct commerce, even if they do not have access to a computer. Working with Transact, SpeechSite will enable customers to purchase products and services, and check order status, from any telephone. www.openmarket.com

WEBMETHODS, PSDI & MRO.COM PARTNER 7/20/99

webMethods, Inc., and MRO.com, Inc., a whollyowned subsidiary of PSDI, announced the companies have entered a strategic partnership to deliver a series of XML-based e-Commerce solutions to PSDI customers. Under the agreement, PSDI will incorporate webMethods' XML technology into MRO.com, PSDI's businessto-business e-Commerce network that connects buyers and suppliers over the Internet. MRO.com is an online marketplace that supports the procurement, management, control and purchase of all MRO goods and services. Using webMethods B2B, MRO.com will provide buyers with direct access to Web-hosted and XMLbased catalogs and real-time connections to the back-end systems of their suppliers, further reducing the typically high costs associated with traditional, paper-based MRO processes. In addition, PSDI plans to extend its XML-enabled set of Java-based business application interfaces to further enhance MAXIMO, its industry leading EAM system, for business-to-business integration with enterprise systems. This will allow integration with applications and systems from a wide array of vendors inside or outside the firewall. www.webmethods.com, www.psdi.com.

AURIGIN SYSTEMS INTEGRATES CARTIA THEMESCAPE 7/20/99

Aurigin Systems, announced an agreement with Cartia, Inc. to integrate its ThemeScape visualization software into the Aurigin Intellectual Property Asset Management (IPAM) system.. Cartia's ThemeScape will be available from Aurigin as a standard add-on component of the Aurigin IPAM system. Cartia's ThemeScape will enable IPAM customers to integrate diverse content, automatically extract the core themes and topics, and organize them into an interactive thematicmap. Similar in appearance to topographical maps, thematic maps are a visual representation of a collection of documents arranged by thematic content. www.cartia.comm, www.aurigin.com

WEBB INTERACTIVE SERVICES TO USE BEA WEBLOGIC SERVER 7/20/99

Webb Interactive Services, Inc. announced that it has incorporated the WebLogic Server from BEA Systems, Inc. as its application server platform for delivering XML-based components. Webb's XML-based publishing technology creates a new platform for publishing and aggregating local content and commerce information that is capable of supporting tens of thousands of small businesses. Using XML and Java as the underlying technology will better allow Webb to leverage the content in a way that enables consumers to shop more easily and enables merchants to publish and promote their products far more effectively. <u>www.webb.net</u>

Linguistic Technology Shows EasyAsk 7/20/99

Linguistic Technology Corporation (LTC) unveiled EasyAsk eCom 1.0, a new natural language question/answer search technology for e-commerce. EasyAsk eCom allows retail consumers, business-to-business buyers and merchants to interact with e-commerce product catalogs and purchase history using plain English. EasyAsk eCom features an extensive vocabulary (dictionary) that is automatically extended upon installation by interrogating the underlying e-commerce database. The dictionary, which can be enhanced dynamically, contains product attributes found in the database and: synonyms, structured hierarchies, and business logic. An Agent feature can monitor the e-commerce database and notify managers of the occurrence of key events. EasyAsk eCom is available immediately. Pricing includes an initial license fee of \$5,000 plus a monthly usage and support fee of 10 cents per question answered. There is a minimum monthly fee of \$999, and volume discounts are available as the number of questions answered increases. Implementation services are available from the company. www.easyask.com

PROGRESS INTRODUCES APPTIVITY 3.1 7/20/99

The new version delivers enhanced XML support for improved connectivity and data integration, according to the Bedford-based developer. Version 3.1 also includes enhanced SQL functionality to deliver E-commerce applications that support vendor-specific queries on enterprise databases by vendors such as Oracle Corp. Currently, Progress has more than 2,000 Apptivity VARs. The company recently formed a program to enable its VARs to extend more than 5,000 packaged applications to the application service provider (ASP) model. With technology and services from Progress, numerous VARs are expected to embrace the ASP business model. www.progress.com

OASIS ADVISES WHITE HOUSE ON E-COMMERCE 7/20/99

OASIS has agreed to participate in a focus group on Internet Standardization and E-Commerce organized by the Office of Science and Technology Policy of the Executive Office of the President of the United States. The focus group, which will be held at the White House Conference Center in Washington, DC on Tuesday, July 20, will examine how changing technological, market, and legal environments are affecting the development of standards for the Internet, electronic commerce and knowledge management. www.oasis-open.org

OAGI FORMS COUNCIL TO FOSTER XML BASED APPLICATION INTEGRATION 7/20/99

The Open Applications Group, Inc. (OAGI) announced the formation of a Customer Interoperability Council, made up of end users, that will work with the OAGI's existing software vendor membership to promote adoption of standards based application integration technology. The OAGI Interoperability Council will focus on development of industry specific Business Object Documents that define interapplication message formats and the

deployment of enterprise integration frameworks based on the Open Applications Group Integration Specification (OAGIS), XML and transactions sent over middleware conforming to the newly released Open Applications Middleware API Specification (OAMAS). This approach will simplify integration of Financial, Human Resources, Manufacturing, Logistics, and Supply Chain application components both within the enterprise and among trading partners. The OAGI Interoperability Council is holding one of its regular meetings in Chicago on July 28-29, 1999. Interested parties are welcome to participate www.openapplications.org.

DATA MINING CONSORTIUM DEVELOPS PREDICTIVE MODELING STANDARD 7/20/99

The Data Mining Group (DMG) announced the first version of an XML-based open standard for defining predictive models. The Predictive Modeling Markup Language (PMML) provides a quick and easy way for companies to define predictive models and share models between compliant vendors' applications. The founding consortium companies include: Magnify, Chicago; SPSS Inc., Chicago; Angoss Software Corp., Toronto; NCR Corp., Dayton, Ohio; and the National Center for Data Mining (NCDM) at the University of Illinois at Chicago (UIC). DMG founders invite other vendors and interested parties to participate in the proposed W3C standards initiative. First developed by NCDM and then revised and enhanced by the DMG, PMML is an XML-based language providing applications a vendor-independent method of defining models so that proprietary issues and incompatibilities are no longer a barrier to the exchange of models between applications. Predictive models express the patterns of information discovered in data mining, which companies then may use to develop specific strategies from which they can realize increased profitability. The Data Mining Group has applied for W3C working group classification. More information about PMML Version 1.0 and becoming PMML compliant is available from the Data Mining Group at www.dmg.org

ORACLE ANNOUNCES ORACLE81 ON Linux 7/19/99

Oracle Corporation announced dramatic growth and demand for Oracle on Linux with strong adoption in both enterprise and general business markets. Oracle also announced the general availability of Oracle8i on Linux, after completion of an early adopter's program. www.oracle.com

'Eve's Advisory' Site to Provide XML Info 7/19/99

Arbortext has launched an XML advisory site to be hosted by Eve Maler. The site provides free insights on XML, as well as a wealth of XMLrelated resources and links. Eve's Advisory provides a forum for questions and is designed to give clear, concise answers. The debut issue of Eve's Advisory, entitled, "Validation: It's a Good Thing," answers a reader's question about whether XML will free him from the tyranny of rigid structure in document authoring. Readers can send their own questions to askeve@arbortext.com. The site also provides links to resources, such as standards information, XML authoring tips, and calendars and agendas for upcoming educational events, end-user forums, and online product tutorials. www.arbortext.com

MICROSOFT ANNOUNCES DESIGN REVIEW FOR METADATA EXTENSIONS 7/19/99

Microsoft Corp. announced it will hold an open design review for gathering industry feedback on new metadata extensions that will enable a business to integrate its line-of-business, data warehousing, and knowledge management environments. Also today, the Meta Data Coalition (MDC) formally announced that the Open Information Model (OIM) has been accepted as the metadata standard. The proposed extensions to the OIM capture business knowledge such as goals, objectives, processes and rules, as well as terminology and categorizations, enabling the automated linkage between a wide variety of business information types. This linkage is needed for the creation of enterprise information portals or "digital dashboards," which enable real-time decisionmaking by providing businesses with a single window into all their information. The OIM extensions are the result of extensive collaboration with industry partners and represent the first milestone in the effort initiated with the Meta Data Coalition in December 1998. The open design review period for the new model extensions begins today with the availability of preliminary specifications for the following three models: Knowledge description model, Business engineering model, and Business rule model. This phase of the open design process is expected to conclude with an industry partner review in fall of 1999, where updated specifications, final input and early product demonstrations will be presented. Information about obtaining a copy of the specifications and providing feedback during the design review period is available through the Microsoft Web site at

<u>www.microsoft.com/repository/</u> or the Meta Data Coalition Web site at <u>www.mdcinfo.com</u>

UNISCAPE LAUNCHES TRANSLATION WEB PORTAL 7/19/99

Uniscape announced the launch of its E-Services Translation Portal (ETP), Uniscape.com, and a vertical marketplace for translation services that enables businesses to conduct multi-lingual e-commerce. Uniscape.com will enable companies to make human translation quicker, more efficient and reusable. Using Uniscape.com, companies will have the ability to work with translators anywhere in the world and offer them free use of Uniscape's XMLbased Translator Studio. The technology is designed specifically to aid the human translation process by offering access to a scalable translation memory database, workflow automation, content management, and reporting and filtering technology. As the translators do their work, it is captured in a scalable translation memory database, where it can be automatically reused across a company's future translation projects. When content is updated on a Web site or new content is created, the system automatically checks to see if the key terminology, sentences or paragraphs

have ever been translated previously. Prior translations are automatically pulled from the database and translators complete the partially translated files using Translator Studio. Companies are charged a minimal transaction fee of a few pennies for each word processed, with discounts based on the overall translation volume and percentage of reuse. Workflow automation automatically routes files and communications between content producers, translators, reviewers, quality assurance and publishers; according to a company's own business rules and objectives. Reporting capabilities enable companies to track every aspect of their translation and publishing activities. The site will be open in September. Pricing is determined by number of words to be translated and volume of reuse. www.uniscape.com

INTRANET SOLUTIONS ANNOUNCES INTRA. *Doc!* Profiler 7/19/99

IntraNet Solutions, Inc. has announced two new products -- Intra.doc! Profiler and Intra.doc! Commerce -- for adding personalization, Web usage tracking and e-commerce functionality to the Intra.doc! family of Web-based document and content management products. Intra.doc! Profiler helps organizations personalize a user's experience when they access information from Intra.doc!-based Web-sites and track site usage. Intra.doc! Commerce is a companion product to Intra.doc! Profiler and provides all the same capabilities plus the ability to link to financial transaction systems like Cybercash for authenticating and handling credit card transactions. Intra.doc! Profiler and Commerce are derived from IntraNet Solutions' acquisition of Softgoods technology in December of 1998. Both products contain self-registration capabilities and a business rules engine that lets organizations collect and analyze data about users and the information they access so that they can provide users more relevant information. Business rules also can be used to trigger actions that provide additional information based on URLs that users request. For example, a trigger could be set up to survey and poll users based on specific topics, provide coupons, and suggest related information and URLs. In addition, business rules can be easily modified to meet an organization's future

requirements for Web information delivery. Intra.doc! Profiler and Intra.doc! Commerce is sold as optional modules to the Intra.doc! Management System. Intra.doc! Profiler is priced at \$15,000 USD and Intra.doc! Commerce, which includes Intra.doc! Profiler is priced at \$25,000 USD. The Intra.doc! System for Workgroups starts at \$30,000 USD for up to 50 contributors and unlimited consumers in Windows NT or UNIX environments. Intra.doc! Enterprise starts at \$85,000 USD for unlimited contributors and unlimited consumers in Windows NT or UNIX environments. www.intranetsol.com

ANDROMEDIA INTRODUCES LIKEMINDS PERSONALIZATION SERVER 3.0 7/16/99

Andromedia. Inc. announced LikeMinds Personalization Server 3.0. LikeMinds Personalization Server 3.0 makes the most of every click by utilizing virtually any source of consumer behavior data -- be it online or offline, implicit or explicit, real time or historical, transactional or navigational -- to personalize every interaction from the first click to the final checkout. LikeMinds Personalization Server 3.0 introduces two new personalization engines: The Purchase Engine and the Clickstream Engine. The Purchase Engine enables e-commerce vendors to leverage valuable offline and/or online purchase history data to make personalized recommendations. The Clickstream Engine builds customer profiles in real-time, based on navigational data gathered as customers browse a site. This allows an ecommerce vendor who lacks purchase history data and doesn't want to force users to fill out lengthy questionnaires to still offer personalized content and product recommendations. The new engines enable LikeMinds to learn by unobtrusively observing online navigational behavior and shopping activities and automatically adapt in real-time to changes in users' tastes and preferences. The Clickstream and Purchase Engines complement the Preference Engine and Product Matching Engine, which were built into previous versions of LikeMinds Personalization Server. The Preference Engine leverages explicitly stated preferences. The Product Matching Engine makes recommendations based on product similarities, enabling vendors to immediately

recommend new products, before customers have seen, rated, or bought them. No other personalization solution offers e-marketers so many options for leveraging consumer behavior data to personalize interactions with users on their Web sites. LikeMinds Personalization Server 3.0 requires Windows NT 4.0 running on Pentium-class PCs or Solaris 2.6 running on Sun SPARC stations or Ultra SPARC workstations, any CGI-compliant Web server, and ODBCcompliant databases including Oracle 8 and SQL Server 7.0. LikeMinds Personalization Server 3.0 is priced from \$25,000 and is available immediately. www.andromedia.com

SCALA AND STREAMSERVE SIGN Partnership 7/15/99

Scala Business Solutions N.V., and StreamServe announced a strategic OEM contract. Under the agreement, Scala will OEM StreamServe software -- a solution that formats, personalizes and distributes business critical information -and market it as the Scala Output Server. Scala recently introduced its XML-based electronic commerce solution, Scala.Solutions, which will now be offered with the Scala Output Server option. Scala Output Server will enable current and potential Scala Global Series customers to create documents, such as invoices and shipping statements, which are formatted and customized for individual receivers, improving the clarity of communications to help retain and attract customers. The Scala Output Server will then distribute the information to each receiver individually across a variety of channels including printers, archives, fax servers, e-mail gateways, pagers, SMS (Short Message Service for mobile phones) and PDF files. Also, the Scala Output Server can output to XML, HTML or EDI, allowing companies to expand to e-business solutions such as Scala. Solutions. The Scala Output Server will have limited availability on September 1, 1999, and will be generally available in Q4, 1999. www.streamserve.com, www.scala.se

INTRASPECT TO SUPPORT OFFICE 2000, WEBDAV 7/14/99

Intraspect Software announced full support for Microsoft Office 2000 and the WebDAV protocol in Intraspect Knowledge Server (IKS). Intraspect's Knowledge Server, coupled with Internet Explorer 5.0, allows users to drag-anddrop any file from their desktop to the IKS repository. Microsoft Office and other documents are immediately indexed and locatable through IKS' Browser User Interface. Office 2000 users can open a document directly from an Intraspect WebDAV server, modify it, and save the updated version back to the server -- all from within the Office 2000 applications. www.intraspect.com

ACORD TRANSACTION WORKING GROUP BRINGS EXPERIENCE, EXPERTISE TO XML STANDARDS PROCESS 7/14/99

The ACORD Transaction Working Group met recently to tackle the necessary infrastructure and protocol needed to effectively transport XML transactions. Participating in the working group are Microsoft, Travelers, PMSC, SAFECO, NCFocus, National Grange Mutual, Symmetry Technology Labs, Progressive, APT, Ontos, ISO, Hartford, Applied Systems, Kemper, Delphi, IVANS, CGU, AMS, St. Paul, Docucorp, and others. Concurrently, the Data Requirements Working Group is analyzing the AL3 and ObjX standards in order to assure that all lines, including Personal, Commercial, Surety, Claims, and Accounting, are included in the initial dictionary. This group was formed out of the recently announced joint initiative between ACORD and the Independent Insurance Agents of America's (IIAA) Agent's Council for Technology (ACT). Working toward an August 31, 1999 deliverable, the groups plan to complete the ACORD Insurance XML Dictionary. The objective, introduced by IIAA/ACT, is to prevent industry fragmentation by providing a base dictionary for the production of all future insurance XML transactions. IIAA/ACT is an advisory board of agent and industry representatives, formed by the IIAA to foster

understanding and better utilization of technology in the independent agency system. ACT also helps to provide technology education, acts as a catalyst for the research and practical implementation of technology, and monitors related legislative developments. www.acord.org

Open Market to Acquire FutureTense 7/14/99

Open Market, Inc. announced that it entered into a definitive agreement to acquire FutureTense, Inc. Under the terms of the agreement, Open Market expects to issue approximately 7,226,000 shares of its common stock to the holders of outstanding FutureTense stock. In addition, Open Market will assume options to acquire FutureTense stock, which will convert into options to acquire approximately 1,118,000 shares of Open Market common stock. A portion of these options will be exercisable immediately upon the closing of the transaction. As of the close of trading vesterday, these shares had an aggregate market value of approximately \$125 million. The companies expect that the transaction will be accounted for as a pooling of interests. The transaction is subject to shareholder approval and is expected to close in Q4 1999. Open Market believes that the combination of its products and those from FutureTense will provide customers with the potential to: Deploy e-business solutions more quickly and reduce the cost of vendor selection, integration and ongoing support, Create e-business Web sites with increased revenue potential because integrating content and commerce management helps maximize the value of online customer relationships, Extend and expand systems more easily because of FutureTense's open application server architecture. Upon closing the transaction, Gary Eichhorn will continue as CEO of Open Market. Ron Matros, president and CEO of FutureTense, will join Open Market as president and chief operating officer. BC Krishna, co-founder and chief technology officer of FutureTense, will join as Open Market's chief technology officer. A demonstration showing what a dynamic, personalized web site created with the two integrated products looks like is available on the Web at www.openmarket.com/futuretense

EXE TECHNOLOGIES TO SUPPORT BIZTALK 7/14/99

EXE Technologies, Inc. announced its commitment to support Microsoft's BizTalk Framework by developing industry-specific schemas that will enable the seamless exchange of business information for EXE's customers. EXE Technologies will support Microsoft's advocacy of XML and industry standards for sharing business information by using BizTalk schemas and developing industry-specific schemas for EXE applications. EXE customers will execute BizTalk schemas as the default business-tobusiness communication language and EXEdeveloped schemas for industry-specific functionality. Industry-specific schemas developed by EXE will be submitted to the BizTalk.org schema repository. In addition to committing to develop and use BizTalk XML schemas, EXE is participating in the beta program for Microsoft BizTalk Server and is working to ensure that BizTalk Server and schemas will seamlessly integrate with EXE's application suite, EXceed. The BizTalk-enabled solutions will allow businesses to easily and uniformly exchange data with ERP, APS, Order Management, and other applications. EXE will deliver the first BizTalk schemas later this year. www.exe.com.

INTERWOVEN ACQUIRES LEXINGTON SOFTWARE 7/13/99

Interwoven, Inc. and Lexington Software Associates (LSA) announced an agreement for Interwoven to acquire LSA. LSA was founded in 1997 to help companies create quality software and Web applications. Their consulting expertise is in configuration management, process management and implementation, and electronic asset management and troubleshooting. The Professional Services Organization (PSO) at Interwoven provides customized implementation of Interwoven software in order to leverage existing Web practices, tools and processes. PSO consists of three main practices: consulting, technical support and training. These represent a complete service offering as a complement to Interwoven's content management products.

The LSA acquisition will be integrated into PSO effective immediately. <u>www.interwovwn.com</u>

INFORMATION ARCHITECTS RECEIVES PATENT APPROVAL FOR E-COMMERCE APP 7/13/99

Information Architects Corporation has received a Notice of Allowance from the U.S. Patent Office covering its Web application server technologies. The patent allowance covers technologies at the core of Information Architects' (iA) Metaphoria Virtual Web Server products. Metaphoria enables rapid development of Internet products and applications for business users that require efficient access to data from multiple sources. Metaphoria enables data residing in mainframes, client server systems, web servers, Internets and Extranets to be divorced, parsed, combined, personalized and viewed REAL-TIME from any Internet accessible device such as a PC, PDA, WebTV, Palm VII or WinCE device. Metaphoria can not only let the user view selected data but it can update the data across multiple systems in real time with the click of the mouse. www.ia.com

BOWSTREET TO LEAD WORK ON XML FOR DIRECTORY SERVICES 7/13/99

Bowstreet Software, Inc. announced that it will lead work to define an industry standard for describing directory service information in XML. The effort to develop a Directory Services Markup Language (DSML) builds upon work performed by Bowstreet while creating its Web Services Architecture. The DSML effort will be supported by industry leaders IBM, Microsoft, Novell, Oracle, and the Sun-Netscape Alliance to provide customers more flexibility in using and sharing directory information in XML-enabled applications. DSML provides a way to use directory information without knowing the specific data formats of each directory. End users will benefit because Web-based applications can be aware of their directory policy and profile information and adapt accordingly. Additionally, DSML enables "friction-free" eCommerce value chains to be integrated across corporate boundaries based

on directory information. This capability provides an essential building block as directories play a more significant role on the Internet. Furthermore, DSML complements the goals of the Lightweight Directory Access Protocol (LDAP) and helps to extend the power of LDAP to web-based applications. Bowstreet and supporting companies plan to submit a proposal to appropriate standards bodies. There is an information Web site at www.dsml.org. Additional group members are expected to be added in the future. www.bowstreet.com

This is something to watch closely!

NOVELL PROVIDES DIRECTORY SOLUTION FOR LINKING BUSINESS DATA TO E-BUSINESS APPS 7/13/99

Novell, Inc. unveiled its solution for helping customers link business data for easy use in electronic business applications. Novell demonstrated a new software solution called DirXML. Extending the capabilities of Novell Directory Services (NDS) 8, this new solution links and manages all the places where business and network information is stored. This includes software applications, network operating systems, databases and network devices. This is the first solution based on a directory that not only brings all data together, but also keeps control of the information with the individual departments that own the data. DirXML will connect all data without the need to modify existing software, allowing companies to build on their existing technology investments. Novell has received support for DirXML from partner companies including Bowstreet, Bulletproof Corporation, Compaq Computer Corporation, enCommerce Inc., Entrust Technologies Inc., HAHT Software, Intracus, ISOCOR, Netegrity, NetPro, Oblix Inc., and Unimax Systems Corporation. By utilizing XML, Novell's DirXML will enable companies to connect multiple databases and applications without the need to modify their existing software -- thereby getting the most out of their technology investments. A beta-testing version of DirXML will be available for customers to evaluate in Q4 1999. The final product is expected to ship in 2000 and pricing will be announced at that time. The first version of DirXML will support Novell's NetWare and Microsoft NT operating

system environments, with support for Sun Solaris and Linux platforms to follow soon after the initial release. <u>www.novell.com</u>

MANAGED OBJECT SOLUTIONS DELIVERS VERSION 1.2 OF FORMULA 7/12/99

Managed Object Solutions, Inc. (MOS) today released Formula version 1.2. This new release integrates with Tivoli Systems TME/10 NetView, Tivoli Enterprise Console (TEC) and Hewlett-Packard OpenView Network Node Manager, and provides XML support, business-centric views, and centralized automation. Formula makes it easy for service providers and IT departments to manage complex, heterogeneous networks, while allowing them to keep their existing management applications in place. Developed entirely in 100 percent pure Java, Formula integrates data from multiple management applications, and then delivers a secure, customizable enterprise view through any standard Web browser. The new HP and Tivoli adapters add to the list of management systems supported by Formula. All Formula adapters are CORBA-based and bi-directional, providing a greater scope of visibility and tight integration with the underlying platforms. They dynamically learn what the management system knows and therefore require no configuration. Formula's new XML support simplifies customization of business-centric views. Already capable of providing a universal management console for operations managers, Formula now can take disparate information and organize it on business-centric lines, supplying a specific, valuable view to businesspeople, line-ofbusiness managers and service provider customers. <u>www.mos.cc</u>

EXTENSIBILITY ANNOUNCES COMMERCIAL PRODUCT FOR BIZTALK 7/12/99

Extensibility Inc. announced the first commercial product for BizTalk Framework schema validation. XML Authority 1.1 will provide import and output support for BizTalk Framework compatible schemas and for the XDR schema format and for the W3C schema specification when it becomes available. It will also provide

advanced support for XML namespaces. The test version of XML Authority 1.1 will be made available free of charge to XML Authority 1.0 customers in late July. A special trial version of XML Authority 1.1 will be accessible for download from the BizTalk.org site at www.biztalk.org in August. Using XML Authority 1.1, developers can create and exchange schemas compliant with the BizTalk Framework specifications. XML Authority is \$99.95, multiple user x-Packs are available: 5-user, \$449.95; 10user, \$849.95; 50-user, \$3,995.00. A 10-use trial version may also be downloaded from the Extensibility site. <u>www.extensibility.com</u>

MACROMEDIA SIGNS AGREEMENT TO ACQUIRE ELEMENTAL SOFTWARE 7/12/99

Macromedia, Inc. announced a definitive agreement under which Macromedia will acquire Elemental Software for \$24 million in a stock for stock transaction. Elemental's products Drumbeat 2000 and eStore Builder combined with Macromedia's products like Dreamweaver and Generator, will enable Web developers to create dynamic Web sites for ecommerce, corporate intranets and personalized content. The addition of the Elemental products to Macromedia's Web publishing product family provides a standardsbased end-to-end solution of software for efficiently creating, producing and maintaining dynamic Web sites that automate the process of linking database information to Web applications with reusable code. In the transaction, Macromedia will exchange approximately 625,000 shares of its stock for all of the outstanding equity of Elemental, for a total purchase price of approximately \$24 million. The transaction will be accounted for as a pooling of interests, and is expected to close within 45 days, subject to satisfaction of customary closing conditions and regulatory approvals. Macromedia expects to take a onetime charge of approximately \$3.0 million for expenses related to the acquisition in the current quarter. www.macromedia.com

PLUMTREE SHIPS NEW RELEASE 7/12/99

Plumtree Software announced it has shipped a new release of the Plumtree Corporate Portal.

Enhancements include: A new Active Portal architecture for embedding third-party corporate tools and Internet services in the portal using modular components called Plumtree Portal Gadgets; Self-service personalization, for empowering users to choose the corporate content and services that they use every day for inclusion in a single portal page; Multi-server enterprise scalability, with support for more than 100,000 users; Web administration, with a sophisticated submission and approval process for enabling a wide range of users to contribute to the portal in a controlled way; and Security for the extranet and Internet, with complete access control for all portal contents, including search results. Pricing for the Plumtree Corporate Portal 3.0 begins at \$100,000. The Plumtree Corporate Portal is available immediately. www.plumtree.com

VERITY FILES FOR PUBLIC OFFERING 7/12/99

Verity, Inc. announced it has filed a registration statement in connection with a proposed underwritten public offering of 1,775,000 shares of its Common Stock, plus an overallotment option of 266,250 shares. 1,500,000 of the shares (plus the shares in the overallotment option) are being offered by Verity in a new financing, and 275,000 of the shares are being offered by certain stockholders. SG Cowen Securities Corporation, Banc of America Securities LLC, Dain Rauscher Wessels, a division of Dain Rauscher Incorporated, and SoundView Technology Group, Inc. are the underwriters of the offering. A registration statement relating to these securities has been filed with the Securities and Exchange Commission but has not yet become effective. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any State in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such State. www.verity.com

OASIS OPENS MEMBERSHIP 7/9/99

OASIS, the Organization for the Advancement of Structured Information Standards. announced the restructuring of its membership requirements, widely expanding access to its XML interoperability technical work. The nonprofit consortium, which was previously open only to companies who use or provide products or services based on structured information standards such as XML. SGML and CGM. added new membership categories for individuals and associate XML industry groups. Interested parties may apply for membership online at www.oasis-open.org. OASIS membership levels now include Sponsors, Contributors, Individuals and Associates. Organizations participate in OASIS as either Sponsors or Contributors, based on the level of benefits they wish to receive. Sponsors, who take advantage of comprehensive technical and marketing benefits, support the consortium for 9500 USD annually. Contributors, who also benefit from OASIS marketing and technical work, pay 5000 USD (companies with ten or more employees) or 2500 USD (companies with fewer than ten employees). The new Individual Membership, at 250 USD per year, is offered to those who wish to participate in OASIS technical activities. Like all members, Individuals have the right to attend all OASIS general meetings, and they can fully participate in all working groups. At this level, membership is on an individual basis and is not transferable to other individuals. OASIS supports the development of XML specifications by offering an Associate Membership to individuals representing application or industry standards bodies. Associates, who pay 250 USD annually, are individuals appointed by an industry consortium or standards body (recognized as such by the OASIS Board of Directors) to represent the interests of that body in OASIS. Representatives enjoy the same rights and level of service as Individuals; the difference is that representation is transferable between individuals if the designated contact person for the represented organization gives notice. This allows continuity of participation by an organization even when it is necessary to change designated representatives. www.oasis-open.org

WEBB & THE SWITCHBOARD NETWORK TO PARTNER 7/9/99

Webb Interactive Services, Inc. announced a technology partnership with Switchboard, Inc., focused on bringing Webb's XML-based community publishing and commerce platform to Switchboard's network of merchants, users and distribution partners. Switchboard, Inc., a majority-held subsidiary of Banyan Worldwide is a leading Internet directory that represents thousands of merchants nationwide. Webb's XML-based Internet publishing and advertising platform will strengthen online business/consumer interaction in areas such as offer management and comparison-shopping. This will allow consumers to easily find merchants who best fit their needs, and merchants will be able to interact with targeted consumers more effectively. Switchboard will integrate Webb's technology into its merchant services on Switchboard.com and through its distribution network. No financial terms of the partnership were disclosed. The partnership with Switchboard is the first deployment of Webb's e-commerce platform using XML. www.webb.net

INTERLEAF ESTABLISHES `THE E-CONTENT COMPANY' TO FOCUS ON XML FOR E-COMMERCE 7/8/99

Interleaf announced the establishment of "the econtent company. " Recognized as a separate business segment, the e-content company is dedicated to the development of XML-based content management solutions for e-business applications. The e-content company develops and delivers BladeRunner, the division's solution that provides end-to-end content management solution for e-business applications. BladeRunner enables companies to create, manage, and publish e-content - targeted, timely, personalized, intelligent business information for web-enabled applications using XML as its technology backbone and Microsoft Word for content creation. Companies are able to apply intelligence, structure and style to their business information, generate output in a variety of formats, and dynamically integrate that information with other electronic and

business processes in support of their e-business initiatives. BladeRunner enables organizations to leverage information content and facilitate business transactions through the information chain, connecting companies with their customers, suppliers and distributors. In addition to the establishment of the new business segment, the e-content company will launch their own website, www.xmlecontent.com when it goes live on July 12, 1999. www.interleaf.com

OASIS ANNOUNCES NEW Members 7/8/99

OASIS announced that in response to recent announcements including the XML.org industry portal, record numbers of XML users and vendors have joined OASIS, the Organization for the Advancement of Structured Information Standards. In this, its sixth year since being founded as SGML Open, OASIS has seen membership increase 300 percent. New OASIS Sponsor members include DOCUMENTUM, Interwoven, Microsoft, Object Design, Reuters, and Wavo. IBM, NIST and Synthbank have upgraded their previous membership to Sponsor-level status. Also joining OASIS as Contributor members are Bluestone Software, CourseNet Systems, Extensibility, GE Information Services, Hynet, iMediation, Novell, ProcureNet and Sequoia Software. www.oasisopen.org

INTERGRAPH & FILENET TEAM TO CREATE SPATIALLY ENABLED DOCUMENT MANAGEMENT SYSTEM 7/8/99

Intergraph Corporation announced its Spatially Enabled Document Management System (SEDMS), a new solution combining geographic information systems (GIS) and document management technology with products from Intergraph, SpatialENTERPRISE and FileNET. These companies have merged their technologies to create a geographically oriented document management solution. Now available, SEDMS is web-enabled allowing a variety of users, such as government and transportation professionals, to quickly and easily access business-critical information on the enterprise network, from an intranet or the Internet. SEDMS is comprised of GeoMedia, Panagon Document Services, and SpatialENTERPRISE. Intergraph's GeoMedia combines seamless data integration with all major GIS vendor formats and an open development platform for creating custom applications. FileNET's Panagon Document Services information repository enables document management and can view over 200 file types, offering flexibility and reliability. The SpatialENTERPRISE solution links GeoMedia and Panagon Document Services into an integrated environment. With this new SEDMS solution, document access and map displays can all be conducted from a single window. For example, parcels of land can be associated not only with the usual attributes such as area. valuation and owner name, but also with documents such as permit applications, building photographs and crime statistics. Likewise, bridges can be linked to traditional data such as bridge rating, height and width, and also with information such as inspection reports, design drawings and video logs. www.intergraph.com

GLOBEID DELIVERS IMPLEMENTATION OF ECML 7/7/99

GlobeID, announced it has performed the worlds first secure Internet purchases using the Electronic Commerce Modeling Language (ECML) standard. The transaction, which took place on Tuesday, July 6, 1999, was run at GlobeID's Paris office. The implementation demonstrates the compliance of GlobeID's @dvanced Payment Solution Suite with ECML. ECML enabled @PayWallet and @PayButton will be commercially available this quarter. The ECML format was announced in early June by a consortium of major technology companies, including AOL, IBM, Microsoft, Compaq, CyberCash and others, along with Visa, Mastercard and American Express. Until now no real-time transaction application has been conducted. ECML, the new proposed standard, is a set of XML tags that merchants will be asked to use on their merchant servers to make form completion easier. www.globeid.com

USI ANNOUNCES WORKFLOW FOR DOCS OPEN 7/7/99

Universal Systems Inc. (USI) officially announced its e.POWER Workflow Activator for PC DOCS/Fulcrum's DOCS Open. The initial version is designed to meet the needs of existing and new PC DOCS/Fulcrum customers. Workflow Activator is accessible from the DOCS Open user interface making the automation of enterprise processes available to organizations in an already familiar environment. Enterprise processes such as procurement and contract management procedures in governmental agencies or the management of change in manufacturing and utilities are repetitive and occur frequently. USI already deploys PC DOCS/Fulcrum as part of the e.POWER Records Management Edition, the workflow-enabled records management application certified by the Department of Defense (5015.2 Standard). Using both Web browsers and Windows clients, e.POWER Records Management Edition supports a wide range of applications from correspondence and action management to electronic procurement and customer service. With e.POWER Workflow Activator. customers use their existing DOCS Open client with e.POWER WorkManager for workflow and process automation. www.USI-Web.com

VIGNETTE COMPLETES ACQUISITION OF DIFFUSION; ANNOUNCES MULTI-CHANNEL SERVER July 7, 1999

Vignette Corporation announced that on June 30, 1999, it completed the acquisition of Diffusion Inc. Vignette announced the acquisition of Diffusion earlier this year, and completed the initial technology integration in less than three months. Today, Vignette is also announcing the Vignette Multi-Channel Server, a solution based on the integrated technology, enabling organizations to extend their online customer relationship building. Vignette Multi-Channel Server is targeted towards organizations that look to develop tighter, more individual customer relationships with their online customer base. The new software provides a central point of management and control for automated interaction with a

defined customer community. Vignette Multi-Channel Server will enable Vignette customers to manage the distribution of personalized information across any delivery channel, including the Web, e-mail, fax, pager and telephone, regardless of the channel the communication originates from or is routed through. <u>www.vignette.com</u>

LUTRIS DELIVERS XML COMPILER TO ENHYDRA 7/7/99

Lutris Technologies released Enhydra 2.1. Enhydra 2.1 is a Java/XML application server with new developer tools leveraging XML. Enhydra XML Compiler (XMLC) is a new XML technology that eliminates the shortcomings of embedding code in HTML found in Sun's JavaServer Pages (JSP) and Microsoft's Active Server Pages (ASP). Merging W3C consortium standards XML and the Document Object Model (DOM), Enhydra now supports a new, more efficient approach for interface designers and programmers to codevelop Web applications using Java to generate dynamic HTML. Lutris developed a technology similar to JSP and ASP over two years ago. Since then, the limitations of this approach have become obvious during the course of many consulting engagements. These limitations include: HTML editor incompatibility, wasteful designer/engineer interdependence, needless manual source file editing, and difficult application maintenance. Enhydra XMLC overcomes these limitations. XMLC converts HTML documents into Java classes represented as DOM objects. The W3C standard DOM defines a way to represent XML documents as a Java object tree. This process lets developers easily isolate data application logic from interface design, improving collaboration between the developer and the interface designer. The inclusion of simple id tags in an HTML document means that HTML templates can be created with any HTML editor, and then be modified and re-used with no impact on the underlying application. Available now, Enhydra 2.1 runtime and source code is free and may be downloaded from www.enhydra.org. On-line demonstrations, documentation, and FAQs are provided for quick evaluation. <u>www.lutris.com</u>

PROGRESS APPTIVITY 3.1 DELIVERS ENHANCED CAPABILITY, XML TO JAVA APPLICATION SERVER 7/7/99

Progress Software announced Progress Apptivity Version 3.1, its Java application server and integrated development environment. The new version's support for XML facilitates the deployment of broadly available business-tobusiness and e-commerce applications. In addition, enhanced SQL functionality strengthens e-commerce applications by allowing custom, vendor-specific queries on enterprise databases. Progress Apptivity Version 3.1 greatly increases the ability for enterprises to exchange information via support for documents formatted with the XML data interchange language. Progress Apptivity Version 3.1's integrated XML support enables more rapid deployment of business-to-business transactions such as procurement and cataloging without the need for external XML servers. Via enhanced Progress Apptivity SmartAdapter technology, inbound XML data are integrated into local applications as relational data, reducing the need for manual conversion. Additional enhancements include: Improved SQL Functionality, Conditional HTML, Java 2 Support, and a Refined Look and Feel. Progress Apptivity server prices start at \$10,000 USD. Availability is immediately. www.apptivity.com

XML.ORG GETS FINANCIAL Commitment 7/7/99

OASIS, the Organization for the Advancement of Structured Information Standards, announced it has received financial commitment from industry for XML.org, the global XML industry portal. IBM, Oracle, SAP and Sun Microsystems have all agreed to support XML.org as Founding Partners, and Commerce One, DataChannel, Documentum, the Graphic Communications Association (GCA) and SoftQuad have demonstrated their support as XML.org Founding Affiliates. XML.org Partners (companies with revenues in excess of \$250M US) are expected to contribute 100,000 USD and Affiliates (companies with revenues under \$250M US) to provide 25,000 USD annually to fund the industry portal. Initially, the XML.org Steering Committee will be led by these founding organizations, although other companies are welcome to participate in the future by becoming Partners or Affiliates. XML.org (<u>http://xml.org</u>) is the OASIS XML industry portal that provides accurate, timely information about the application of XML in industrial and commercial settings. XML.org serves as a reference repository for specific XML standards such as vocabularies, DTDs, schemas, and namespaces. <u>www.oasis-open.org</u>

MERRILL CORPORATION INTRODUCES MERRILL EDGAR ADVANTAGE 7/7/99

Merrill Corporation announced the launch of Merrill EDGAR Advantage, a service to help clients migrate to the Securities Exchange Commission's (SEC's) new HTML and PDF formats for electronic filing. Merrill EDGAR Advantage also continues to offer clients a direct line to the SEC at the highest speed the SEC allows, ensuring that clients are always able to get a connection at peak filing times. To better serve clients, Merrill EDGAR Advantage has launched a new EDGAR resource Web site that includes news and information relative to EDGAR filings. <u>www.edgaradvantage.com</u>

DIFFERENTIAL & UWI.COM TEAM UP ON E-COMMERCE 7/5/99

Differential and UWI.Com, announced a strategic relationship. The combined technology provides a safer than paper solution for enterprises and financial institutions to securely send and receive legally binding transactions and other contractual agreements for conducting business-to-business ecommerce. Differential's Digital Receipt Infrastructure compliments InternetForms by providing a complete non-repudiation solution for e-commerce and legacy systems. Nonrepudiation is the use of strong electronic evidence to prove to an independent third party that a document or transaction was sent and received at a specific time by a specific person or company. Non-repudiation requires an irrefutable trail of digital evidence, as well as

protocols and procedures for transaction verification, dispute resolution, auditing and reconciliation. A Digital Receipt is an XML document, which captures the digital signatures of the sender and the receiver, a verifiable time stamp and standardized transaction details. Digital Receipts may contain information about related receipts permitting complicated transactions to be re-assembled and reconciled. Digital Receipts also support real-time assurance such as online notaries, insurers and auditors. An InternetForm is an XML document that preserves in a single, digitally signed form all of the elements of a transaction required to produce a binding record. InternetForms capture the questions a form posits, and the answers a person provides, as well as any internal form logic and attached related documents, to provide non-repudiation and preserve the signer's intent. www.uwi.com, www.differential.com

DOCUMENT SCIENCES ANNOUNCES DLS VERSION 5.0 7/7/99

Document Sciences announced the general availability of Document Library Services (DLS), version 5.0, a new version of its present document automation application. DLS provides users with an end-to-end solution for compliance document management and document production. DLS provides users with a Windows interface to manage and control the business logic and textual content of regulated documents such as Insurance Policies and Contracts. These documents can then be published through CompuSet, Document Sciences industrial strength composition engine. DLS, version 5.0, extends this capability with two new exciting offerings, DLS Express and DLS Batch for MVS. DLS Express is a new offering from Document Sciences that carries some of the same document automation features of DLS while allowing publishing of output to Microsoft Word. This new offering, with its lower cost, is ideal for smaller companies, for departmental applications, or for distributed production environments.

DLS Batch for MVS, the newest member of the DLS family of products, extends high-volume batch production capabilities in the MVS mainframe environment. DLS Batch for MVS increases the throughput capabilities of DLS and facilitates multi-threaded processing. www.docscience.com

OASIS ANNOUNCES NEW BOARD 7/2/99

OASIS, the Organization for the Advancement of Structured Information Standards, announced the election of a new board of directors led by Simon Nicholson (Chrystal Software) as chairperson and Bill Smith (Sun Microsystems) as president. Jonathan Parsons (Xyvision Enterprise Solutions) serves as vice president/secretary/treasurer and Bob Sutor (IBM) as chief strategy officer. Norbert Mikula (DataChannel) serves as chief technical officer and leads the technical track. Mary McRae (DMSi) serves as chief marketing officer and leads the marketing track. Alan Hester (Xerox) serves as director and liaison to the CGM-Open affiliate consortium. www.oasis-open.org

INTERLEAF ANNOUNCES GENERAL CUSTOMER SHIPMENT OF BLADERUNNER 7/2/99

Interleaf, Inc. announced volume general customer shipment of BladeRunner, the Company's XML-based, and Microsoft Wordbased e-content solution. Now BladeRunner is immediately available to any business that requires customized, dynamic, and intelligent econtent solutions for e-business applications. The general customer shipment of BladeRunner comes shortly after the completion of the Early Adopter Program (EAP). EAP was designed to enable customers to deploy a pre-release version of BladeRunner, develop XML-based prototypes, and evaluate the performance of applications through close collaboration with Interleaf's development organization. www.interleaf.com

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CALENDAR

XML World, September 13-16, Chateau Laurier, Ottawa, Fall '99 Standards Week, September 13-17, 1999, Silver Spring, MD, AIIM 1.301.587.8202 jwisdom@aiim.org Canada, 1 514 288 7501 AIIM hosted ANSI meetings on document standards. An Interdoc event. Fall Internet World, October 4-8, Jacob K. Javits Center, Documation Canada, November 15-18 Holiday Inn, Toronto, Canada, 1 514 288 7501 New York, NY 800.500.1959 The larger of the 2 Canadian versions of this event. Run by The largest of the Internet events which these days means one of the largest general-purpose IT shows. Lot's of E-Interdoc. commerce stuff this year, but also everything else internet-related. XML/SGML Asia Pacific '99, October 18-21, Hotel XML '99 - Enabling Business Innovation on the Web, Mercure, Sydney, Australia. 1 703.519.8159 December 5-9, 1999 Pennsylvania Convention Center Philadelphia, Pennsylvania, 1 703 519 8160 The Asia/Pacific version of the US and European Markup Technologies '99, December 5-9, 1999 conferences by the GCA. Pennsylvania Convention Center Philadelphia, Pennsylvania, 1 703 519 8160 The annual GCA gathering. The Markup conference is more technical.

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